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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,453	08/08/2003	Benjamin E. Chelf	COV-1	3626
36532 7590 12/21/2006 G. VICTOR TREYZ FLOOD BUILDING 870 MARKET STREET, SUITE 984 SAN FRANCISCO, CA 94102			EXAMINER KISS, ERIC B	
			ART UNIT 2192	PAPER NUMBER
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		12/21/2006	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No. 10/637,453	Applicant(s) CHELF ET AL.	
	Examiner Eric B. Kiss	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 August 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-18 have been examined.

Drawings

2. New corrected drawings in compliance with 37 CFR 1.121(d) are required in this application because the drawings are not in compliance with 37 CFR 1.84 (g), (l), and (p). Applicant is advised to employ the services of a competent patent draftsman outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4. Claims 1-10 and 15-18 are rejected under 35 U.S.C. 102(a) as being anticipated by the Smatch C source checker (hereinafter "*Smatch*"), as evidenced by the following documents (See MPEP § 2131.01):

- "Installing Smatch!!!", 10/11/2002 [online], accessed 12/19/2006, retrieved from Internet

<URL:

<<http://web.archive.org/web/20021011112904/http://smatch.sourceforge.net/installing.html>>

(1 page) (hereinafter "*SmInst*");

Art Unit: 2192

- “Smatch!!!”, 04/04/2003 [online], accessed 12/19/2006, retrieved from Internet <URL: <http://web.archive.org/web/20030404041020/http://smatch.sourceforge.net/>>, (3 pages) (hereinafter “*SmMain*”);
- “Smatch Intermediate Code Representation!!!”, 10/11/2002 [online], accessed 12/19/2006, retrieved from Internet <URL: <http://web.archive.org/web/20021011071814/http://smatch.sourceforge.net/intermed.html>> (3 pages) (hereinafter “*SmIR*”);
- “Using Smatch!!!”, 04/13/2003 [online], accessed 12/19/2006, retrieved from Internet <URL: <http://web.archive.org/web/20030413091737/http://smatch.sourceforge.net/usingSmatch.html>>, (2 pages) (hereinafter “*SmUsing*”); and
- “Using smatch.pm!!!”, 07/15/2003 [online], accessed 12/19/2006, retrieved from Internet <URL: <http://web.archive.org/web/20030715162055/http://smatch.sourceforge.net/coding.html>> (5 pages) (hereinafter “*SmUpm*”).

As per claim 1, the *Smatch* documents disclose:

running a build program on the computer system to invoke compilers on the computer system that compile the source code files into executable code (Smatch uses a modified gcc compiler; see, e.g., *SmMain* at p. 1), wherein running the build program produces a build program output (*Id.*; the modified gcc compiler compiles the code, and also produces .sm files); and

running a static analysis tool management program on the computer system to invoke the static analysis tools and produce corresponding static error analysis results (see, e.g., *SmIR*, describing running a checker script on a bunch of .c.sm files generated by the compiler), wherein the static analysis tool management program accepts the source code and the build program output as inputs (note that the .sm files are representations of the source code).

As per claim 2, the *Smatch* documents further disclose directing the build program output to a file that is used as an input by the static analysis tool management program (the .c.sm files are piped through individual Smatch scripts; see, e.g., *SmMain* at p. 1).

As per claim 3, the *Smatch* documents further disclose directing the build program output to a file that is used as an input by the static analysis tool management program (the .c.sm files are piped through individual Smatch scripts; see, e.g., *SmMain* at p. 1), wherein the file contains information on which static analysis tools to substitute for each compiler when the static analysis tools are invoked (the individual Smatch scripts specify particular static analyses; see, e.g., *SmMain* at p. 1).

As per claims 4 and 5, the *Smatch* documents further disclose providing a user with an opportunity to specify for the static analysis tool management program which compiler options should be ignored and which additional compiler options are required by the static analysis tools when performing static analysis on the source code (see, e.g., *SmUsing* at p. 1; *Smatch* uses a modified gcc compiler that has an additional command-line option, --smatch; the user has the opportunity to interact with the modified compiler through the command line interface).

As per claim 6, the *Smatch* documents further disclose invoking a plurality of build management utilities with the build program as the build program is run, wherein the build

Art Unit: 2192

program output includes output from the build management utilities (see, e.g., *SmUsing* at p. 1, describing the use of a Makefile).

As per claim 7, the *Smatch* documents disclose:

creating a new directory on a computer system (see, e.g., *SmInst* at p. 1);

modifying a search path on the computer system so that the new directory is included first in the search path (see, e.g., *SmUsing* at p. 1, describing the modification of the Make CC variable);

placing the static analysis tools into the new directory, wherein the static analysis tools in the new directory are given names matching the compiler names (see, e.g., *SmUsing*; the modified compiler is referenced by the CC variable in the Make configuration); and

running the build program so that the static analysis tools with the names matching the compiler names are invoked (the modified compiler is used to compile code for use with *Smatch*; see, e.g., *SmIR* at p. 1).

As per claim 8, the *Smatch* documents further disclose:

obtaining information from a user on compilation options for the compilers (see, e.g., *SmUsing* at p. 1; *Smatch* uses a modified gcc compiler that has an additional command-line option, --smatch; the user has the opportunity to interact with the modified compiler through the command line interface); and

using the information on the compilation options when invoking the static analysis tools by running the build program (*Id.*).

As per claim 9, the *Smatch* documents further disclose running the build program comprising making calls to the compiler names (the modified compiler is used to compile code for use with *Smatch*; see, e.g., *SmIR* at p. 1).

As per claim 10, the *Smatch* documents further disclose running the build program invoking both the compilers and the static analysis tools (the modified compiler is used to compile code for use with *Smatch*; see, e.g., *SmIR* at p. 1; the resulting .sm files are then processed by the *Smatch* scripts; see, e.g., *SmMain* at p. 1).

As per claim 15, the *Smatch* documents disclose:

redefining operating system commands in the operating system (the modified compiler is used to compile code for use with *Smatch*; see, e.g., *SmIR* at p. 1); and

running the build program on the computer system, wherein the redefined operating system commands cause the build program to invoke the static analysis tools in place of the compilers so that the error analysis on the source code files is performed (the modified compiler is used to compile code for use with *Smatch*; see, e.g., *SmIR* at p. 1; the resulting .sm files are then processed by the *Smatch* scripts; see, e.g., *SmMain* at p. 1).

As per claim 16, the *Smatch* documents further disclose using user-specified information on the compilers and compiler options during invocation of the static analysis tools (see, e.g., *SmUsing* at p. 1; *Smatch* uses a modified gcc compiler that has an additional command-line option, --smatch; the user has the opportunity to interact with the modified compiler through the command line interface).

As per claim 17, the *Smatch* documents further disclose redefining the operating system commands comprising redefining operating system process creation and execution commands by

Art Unit: 2192

placing modified versions of the operating system creation and execution commands on the computer system and by instructing the operating system to load the modified versions of the operating system process creation and execution commands (see, e.g., *SmUsing* at p. 1).

As per claim 18, the *Smatch* documents further disclose redefining the operating system commands comprises using a new kernel module containing modified functions (see, e.g., *SmUsing* at p. 1 (step 1b)).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 11-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,960,202 (Granston et al.) and the *Smatch* documents (cited above in the rejection of claims 1-10 and 15-18 under 35 U.S.C. § 102(a)).

As per claim 11, *Granston et al.* discloses:

running a build program on a computer system (see, e.g., *Granston et al.* at col. 3, lines 59-61);

running a monitoring program on the computer system while the build program is running to compile the source code files (see, e.g. *Granston et al.* at col. 3, line 59, through col. 4, line 11), wherein the monitoring program monitors activity between the build program and the operating system (see, e.g. *Granston et al.* at col. 3, line 59, through col. 4, line 11).

Granston et al. fails to expressly disclose using output from the monitoring program to run the build program with static analysis tools substituted for the compilers so that the static analysis tools perform static error analysis on the source code files. However, the *Smatch* documents teach a system where a specialized compiler enabling static analysis is substituted for a normal compiler (the modified compiler is used to compile code for use with *Smatch*; see, e.g., *SmIR* at p. 1; the resulting .sm files are then processed by the *Smatch* scripts; see, e.g., *SmMain* at p. 1). Therefore, it would have been obvious to one of ordinary skill in the computer art at the time the invention was made to incorporate such a compiler substitution for static analysis as per the teachings of the *Smatch* documents. One would be motivated to do so to gain the advantages of enhanced error checking in source code compilation (see, e.g., *SmMain* at p. 1).

As per claim 12, *Granston et al.* further discloses gathering information from a user as to which compilers are used during the build process and which compilation options are to be used (see, e.g. *Granston et al.* at col. 3, line 59, through col. 4, line 11). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claim 13, *Granston et al.* further discloses filtering the output from the monitoring program to remove compiler option commands (see, e.g., *Granston et al.* at col. 2, lines 37-49). Therefore, for reasons stated above, such a claim also would have been obvious.

As per claim 14, *Granston et al.* further discloses running the monitoring program comprises running a custom monitoring program that uses operating system debugging commands (e.g., generating a log file) to monitor the activity between the build program and the operating system (see, e.g. *Granston et al.* at col. 3, line 59, through col. 4, line 11). Therefore, for reasons stated above, such a claim also would have been obvious.

Art Unit: 2192

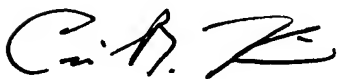
Conclusion

7. Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Eric B. Kiss whose telephone number is (571) 272-3699. The Examiner can normally be reached on Tue. - Fri., 7:00 am - 4:30 pm. The Examiner can also be reached on alternate Mondays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Tuan Dam, can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any inquiry of a general nature should be directed to the TC 2100 Group receptionist: 571-272-2100.



Eric B. Kiss
December 19, 2006